

System Governance-Electricity Systems Team
Department for Business, Energy and Industrial Strategy

Future System Operation
Office of Gas and Electricity Markets

28th September 2021

Dear Sir/ Madam,

I am writing to you as Chief Executive of pioneering clean tech company Enertechnos, to welcome your department's recently published consultation on the Energy Future System Operator (FSO).

Enertechnos is fully supportive of the UK's net zero goal and is dedicated to developing innovative solutions to enable 'better electricity' to support this transition. We have worked extensively on developing cable technology, and our Capacitive Transfer System, 'CTS', reduces energy losses throughout the power network, slashing carbon emissions from wasted energy.

We believe that net zero should be central to the roles, responsibilities, and organisational design of the FSO. We wholeheartedly agree with your view that there must be a focus not only on the decarbonisation of the nation's gas and electricity system, but on its ability to facilitate the decarbonisation of all sectors in the economy.

The goals of achieving net zero and keeping prices affordable for customers don't have to be incompatible. By reducing losses in energy systems, energy networks can become both more environmentally friendly and more affordable for consumers through an increased supply requiring lower inputs.

We share your view that net zero is an unprecedented economic and societal challenge, and the energy system is at the heart of it. We also agree that decarbonisation efforts need to be economically efficient whilst maintaining resilience, all based in a deep technical understanding of the energy system. As such, the FSO approach needs to drive networks to be as ambitious as possible. It also needs to enable innovation in the industry. To achieve net zero goals, barriers to innovative solutions must be removed. The new FSO also needs to recognize that many of these levers are already in place to make a substantial difference to decarbonising energy networks, and existing regulatory framework can act as a basis for achieving this.

Our expertise is particularly focused on electricity. With this in mind, I have listed below specific areas which are critical to bear in mind when considering the roles and responsibilities of the FSO:

1. In section 2.2, you refer to the assimilation of electricity and gas operators as key to delivering net zero, to include balancing services. We understand the aim to move towards greener energy carriers, including gas, and the merging of both gas and electricity organisations increases the likelihood of establishing synergies associated with fulfilling the kinds of technical roles needed to drive net zero. We believe, however, that electrification is the ultimate solution for decarbonising the services. The new FSO mandate, therefore, should take this into account.
2. We recognise the need, as part of the proposed FSO responsibility for system planning and network development, for increased focus on hydrogen and CCUS integration as highlighted in section 3 of the consultation. However, this should not be to the detriment of investment in less costly renewable sources of electricity. With this in mind, the FSO should take a proactive role in ensuring networks are increasing their capacity to meet the significantly heightened future demand for electricity, with the amount of renewable power alone used in the UK set to quadruple to 40GW by 2030. New cables installed now must be able to cope with future demand, and using more efficient and higher performing cables will prepare our system and mitigate the need for extensive costly grid reinforcement down the line.
3. As part of the FSO's proposed role of ensuring coordination with distribution networks, as set out in section 3.2.6, Enertech nos believes innovation should also be given a much greater role in the development of an energy grid which is required to deliver the net zero targets. As such, a key responsibility of the FSO should include facilitating the removal of the barrier to innovation, including those of an economic nature for innovative players. Distribution Network Operators (DNOs) should be empowered and encouraged to use strategic investment in technologies which improve network efficiency, such as low-loss and higher performance cable technology.
4. We welcome your suggestion of ensuring that the FSO plays a greater role in market design, taking on additional duties in relation to the electricity capacity market (section 3.2.5). The grid is taking on growing levels of solar and wind generation as it continues to decarbonise and decentralise. This positive trend is only set to continue as the country aims to quadruple the amount of power produced in this way to 40GW by 2030. As demand continues to rise, the FSO must consider the effect this will have on the level of reactive power (one of the two types of power) produced, and how this will impact the stability of our grid. Managing reactive power comes in the shape of 'balancing' the amount that is on the grid. Too much and the voltage on the grid goes up to a level that threatens to break apparatus, too little and there's not enough pressure to push active power to where it needs to be. In addition to making the market for balancing services more efficient and transparent, it is vital to future-proof the grid's physical infrastructure by making better use of innovative and less expensive assets. This will help reduce our growing over-reliance on costly balancing services.

I would welcome the opportunity to discuss this further and find ways of working together to ensure that the UK achieves a successful transition to net zero. Should this be of interest, or if you require any further information, please do get in touch.

Yours sincerely,



Dominic Quennell
Chief Executive, Enertech